

**WHAT IS CLAIMED IS:**

1. A circuit for detecting ambient light on a display comprising:
  - a) a light integrating photo-sensor circuit having a photosensor and being responsive to ambient light for periodically producing successive photo signals representing the intensity of the ambient light; and
  - b) an averaging circuit for receiving the successive photo signals and producing an average ambient light signal representing a continuous running average of the successive photo signals.
2. The circuit claimed in claim 1, wherein the photosensor is a photodiode.
3. The circuit claimed in claim 1, wherein the photosensor is a photo capacitor.
4. The circuit claimed in claim 1, wherein the photosensor is a phototransistor.
5. The circuit claimed in claim 1, wherein the photosensor circuit and the averaging circuit are thin-film devices.
6. The circuit claimed in claim 1, wherein the photosensor is an organic photosensor.
7. The circuit claimed in claim 1, wherein the photosensor is a silicon photosensor.
8. The circuit claimed in claim 1, wherein the photosensor circuit includes a sensor capacitor, a reset transistor for applying an initial charge to the sensor capacitor, and a photosensor for discharging the sensor capacitor.

9. The circuit claimed in claim 8, further comprising an isolation transistor for connecting the photosensor to the sensor capacitor.

10. The circuit claimed in claim 1, wherein the averaging circuit includes an averaging capacitor for storing the average signal and a transfer transistor for periodically combining a photo signal with the average signal.

11. The circuit claimed in claim 10, further comprising a transistor output amplifier.

12. The circuit claimed in claim 1, wherein the photosensor circuit and averaging circuit are integrated on a common substrate.

13. A display, comprising:

- a) a substrate;
- b) a display area comprising an array of addressable light emitting elements formed on the substrate; and
- c) a circuit for detecting ambient light on a display including
  - i) a light integrating photosensor circuit having a photosensor and being responsive to ambient light for periodically producing successive photo signals representing the intensity of the ambient light, and
  - ii) an averaging circuit for receiving the successive photo signals and producing an average ambient light signal representing a continuous running average of the successive photo signals; and
- d) a controller responsive to the average ambient light signal and display control signals to control the display.

14. The display claimed in claim 13, wherein the display area is rectangular and the photosensor is located at an edge of the rectangular display area.

15. The display claimed in claim 13, wherein the display area is rectangular and the photosensor is located at a corner of the rectangular display area.

16. The display claimed in claim 13, further comprising a plurality of photosensor circuits.

17. The display claimed in claim 16, wherein the photosensor(s) of the photosensor circuits surround the display area.

18. The display claimed in claim 13, further comprising a color filter located over a light receiving surface of the photosensor.

19. The display claimed in claim 13, wherein the light emitting elements, the photosensor, and/or the photosensor circuit are integrated on a common substrate.

20. The display claimed in claim 13, wherein the light emitting elements are OLEDs.

21. The display claimed in claim 13, wherein the circuit for detecting ambient light is formed on the substrate.

22. The display claimed in claim 13, wherein the photosensor is formed on the substrate.